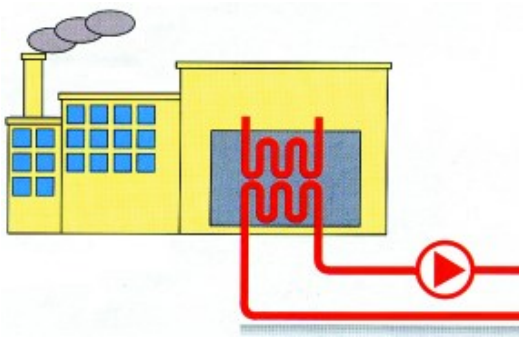
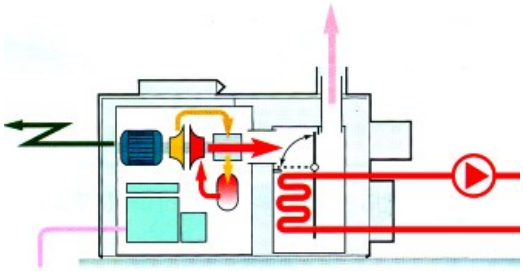
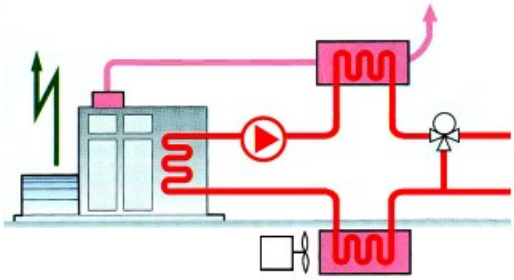
YAZAKI

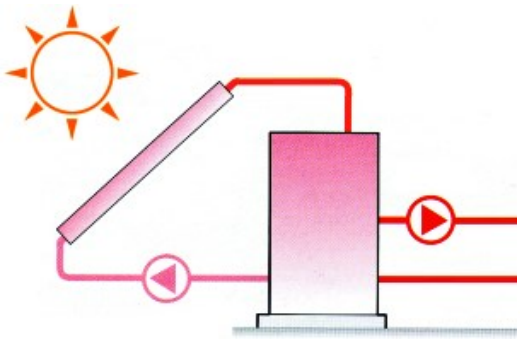
Water-Fired Chiller/Chiller-Heater

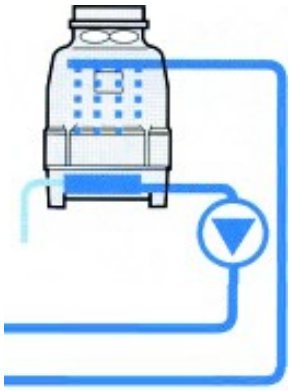
WFC-S Series: 5, 10, 20, 30 and 50 RT Cooling

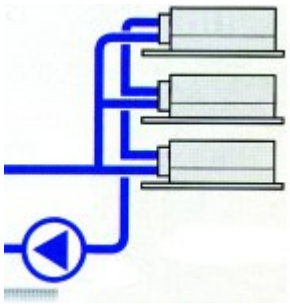












WE ARE FRIENDLY TO THE EARTH

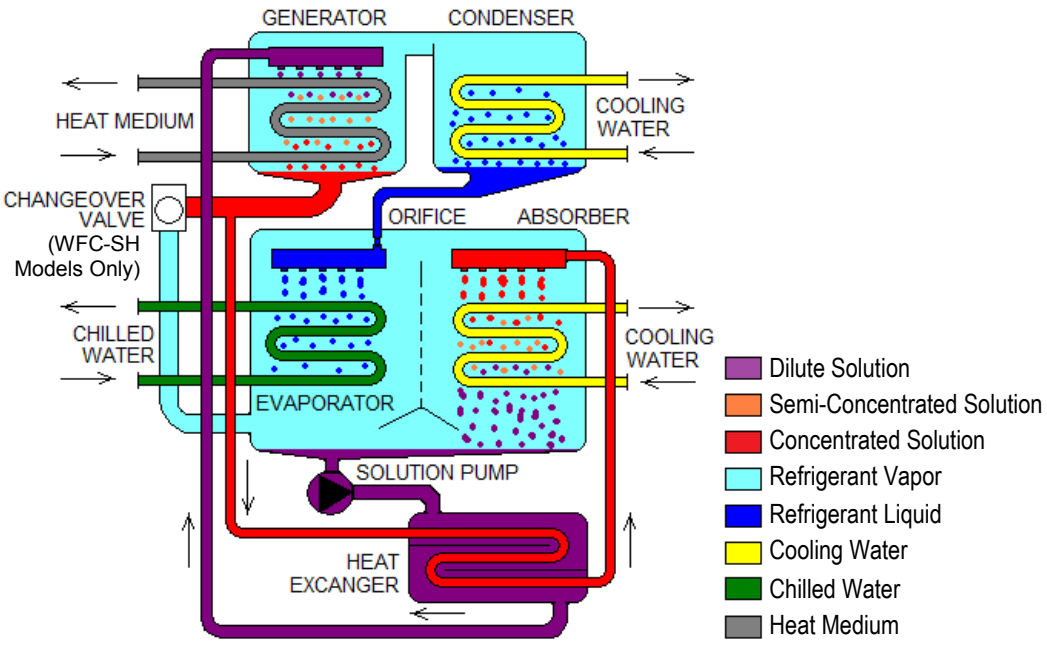
Water-Fired SINGLE-EFFECT Chiller or Chiller-Heater

Yazaki Water-Fired SINGLE-EFFECT chillers have cooling capacities of 5, 10, 20, 30, and 50 tons of refrigeration. Chiller-heaters have cooling capacities of 10, 20, and 30 tons of refrigeration. Both produce chilled water for cooling and chiller-heaters also provide hot water for heating in comfort air conditioning applications. The absorption cycle is energized by a heat medium (hot water) ranging from 158°F (70°C) to 203°F (95°C) from an industrial process, cogeneration system, solar energy, or other heat source. The condenser circuit is water cooled through a cooling tower or ground loop.

Absorption Principle

The Yazaki absorption chiller or chiller-heater uses a solution of lithium bromide and water, under a vacuum, as the working fluid. Water is the refrigerant and lithium bromide, a non-toxic salt, is the absorbent. Refrigerant, liberated by heat from the solution, produces a refrigerating effect in the evaporator when cooling water is circulated through the condenser and absorber.

Cooling Cycle



GENERATOR

When the heat medium inlet temperature exceeds 154.4°F (68°C), the solution pump forces dilute lithium bromide solution into the generator. The solution boils on the surface of the generator tubing bundle, releasing refrigerant vapor. The vapor rises up and flows over into the condenser. The solution becomes more concentrated as a result and the concentrated solution drops into the generator sump where it drains down through a heat exchanger before entering the absorber section.

CONDENSER

In the condenser, refrigerant vapor is condensed on the surface of the cooling coil and latent heat, removed by the cooling water, is rejected to a cooling tower or ground loop. Refrigerant liquid accumulates in the condenser sump and then passes through an orifice into the evaporator.

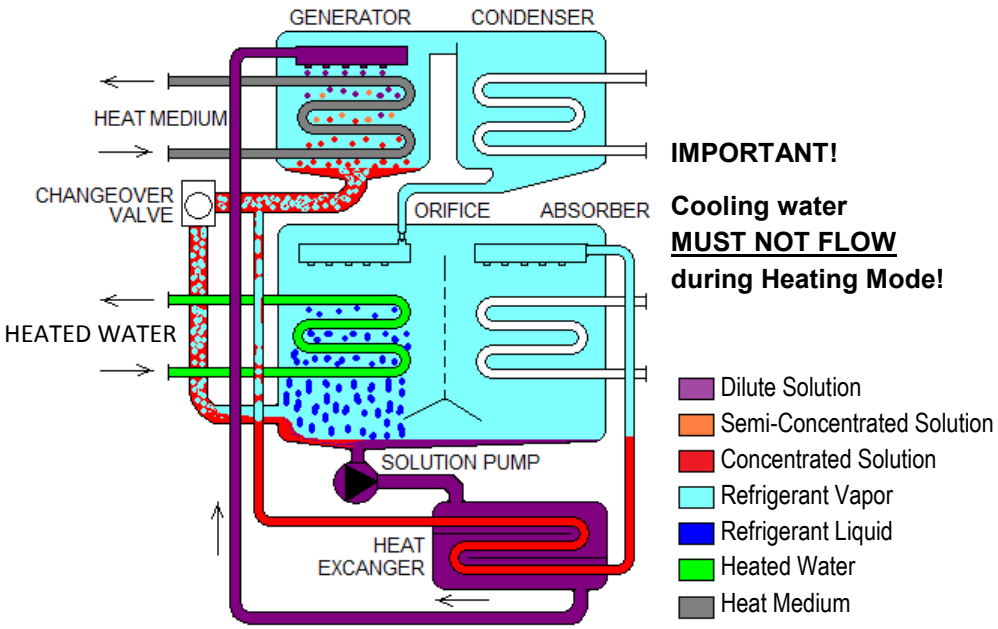
EVAPORATOR

In the evaporator, the refrigerant liquid is exposed to a substantially deeper vacuum than in the condenser due to the influence of the absorber. As refrigerant liquid flows over the surface of the evaporator coil, it boils into vapor and removes an amount of heat from the chilled water circuit equivalent to the latent heat of the refrigerant. The recirculating chilled water is cooled to the selected set point and the refrigerant vapor is attracted to the absorber.

ABSORBER

A deep vacuum in the absorber is maintained by the affinity of the concentrated solution from the generator for the refrigerant vapor formed in the evaporator. The refrigerant vapor is absorbed by the concentrated lithium bromide solution flowing across the surface of the absorber coil. The heat of condensation and dilution is removed by the cooling water and rejected to a cooling tower. The resulting dilute solution is preheated in a heat exchanger and returned to the generator where the cycle is repeated.

Heating Cycle



GENERATOR

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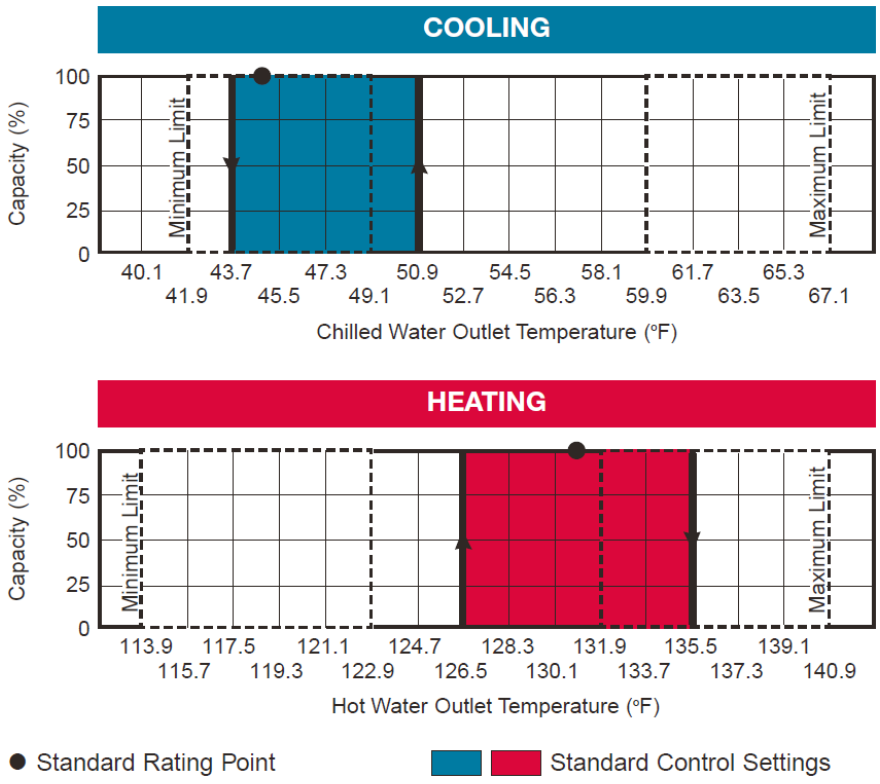
EVAPORATOR

Hot refrigerant vapor condenses on the surface of the evaporator coil and an amount of heat equivalent to the latent heat of the refrigerant is transferred into the hot water circuit. The recirculating water is heated to the selected set point. Refrigerant liquid mixes with concentrated lithium bromide solution and the resulting dilute solution returns to the generator where the cycle is repeats.

Control Characteristics



Features and Benefits

- Ideal for use in a two-pipe system with properly-sized water coils. (WFC-SH models only.)
- Mode and enable/disable condition can be selected remotely.
- Only a 30-minute changeover delay between cooling and heating modes. (WFC-SH models only.)
- The absorption cycle is energized by hot water. Hot water can be from any source such cogeneration, solar, or any waste heat sources as long as it can be provided to the chiller or chiller-heater at a temperature between 158°F (70°C) to 203°F (95°C).
- Extended capacities available when supplied with cooling water colder than design standard of 87.8°F (31°C) and/or heat medium warmer than design standard of 190.4°F (88°C).
- Faster cold start-up time (as quick as 90 seconds) than similar chillers with flooded generators.
- Working fluids of lithium bromide and water operate under a vacuum at all times and are safe, odorless, and non-toxic.
- Only one rotating part — the hermetically sealed solution pump.
- UL Listed as a unit for USA and Canada.
- Vacuum vessel fully hermetically sealed at the factory for a level of vacuum integrity that is unmatched in the industry. No field welding necessary.
- Helps to prevent crystallization by utilizing a solution pump and gravity drain-back design.
- Chilled and hot water outlet temperatures controlled by a built-in microprocessor with outputs to control a 3-way heat medium bypass valve, all relevant pumps, and can even control the cooling tower fan if so desired. (Valves and pumps are field-supplied.)
- Built-in logic will shut down the unit under abnormally high heat medium and/or cooling water temperatures to help prevent crystallization and other service-related issues.
- Proprietary solution and inhibitor blends ELIMINATE the need for regular chemical analysis, resulting in much simpler regular maintenance when compared with most other manufacturers.
- All chillers and chiller-heaters are supplied with UL50E Type 3R cabinets that are suitable for indoor or outdoor installation without modification.
- Factory charged and run tested. Solution balancing done at the factory so that it does not need to be done in the field at startup.

Accessories

Supplied with Chiller/Chiller-Heater:

ACT-3 Maintenance Checker (1)
Installation Instructions (1)
L-Anchor Plates {with WFC-SC50 only}
Leveling Shims (6) {except on WFC-SC50}
Lifting Lugs / Eyebolts (4)
Operating Instructions (1)
Warranty Registration Card (1)
Wiring Schematic (1)

Factory-Installed Options:

FS2 Cooling Water Flow Switch
Higher Pressure Fluid Circuits on Certain Models {except for Heat Medium circuit}
WTI Inlet Chilled/Hot Water Sensor

Optional Field-Installed Accessories:

Building Management System Interface Adapter {LON-compatible}
FS2 Cooling Water Flow Switch
Heat Medium Bypass Valve Kits
WFC-S Service Manual
WTI Inlet Chilled/Hot Water Sensor

Specifications - Imperial Units

Specifications			WFC-	SC5	SC/SH10	SC/SH20	SC/SH30	SC50
Cooling Capacity			Mbtuh	60.0	120.0	240.0	360.0	600.0
Heating Capacity {WFC-SH Only}			Mbtuh	---	166.3	332.6	498.9	---
Chilled/Hot Water	Cooling Temperature		°F	54.5 Inlet / 44.6 Outlet				
	Heating Temperature		°F	117.3 Inlet / 131.0 Outlet {WFC-SH Models Only}				
	Evaporator Pressure Loss		PSI	7.6	8.1	9.6	10.1	6.4
	Max Operating Pressure		PSI	85.3 / {High Pressure Option Available on Select Sizes}				
	Rated Water Flow		GPM	12.1	24.2	48.4	72.6	121.1
	Allowable Water Flow		% of Rated	80% - 120%				
	Water Retention Volume		Gal	2.1	4.5	12.4	19.3	33.6
Cooling Water	Heat Rejection		Mbtuh	145.7	291.4	582.8	874.2	1457.0
	Temperature		°F	87.8 Inlet / 95.0 Outlet				
	Absorber Pressure Loss		PSI	5.6	12.3	6.6	6.7	6.6
	Condenser Pressure Loss		PSI	5.6	Included in Absorber	6.6	6.7	3.2
	Max Operating Pressure		PSI	85.3 / {High Pressure Option Available on Select Sizes}				
	Rated Water Flow[1]		GPM	40.4	80.8	161.7	242.5	404.5
	Allowable Water Flow		% of Rated	100% - 120%				
	Water Retention Volume		Gal	9.8	17.4	33.0	51.3	87.2
Heat Medium	Heat Input		Mbtuh	85.7	171.4	342.8	514.2	857.0
	Temperature		°F	190.4 Inlet / 181.4 Outlet				
	Allowable Temperature		°F	158.0 - 203.0				
	Generator Pressure Loss		PSI	11.2	13.1	6.7	8.8	13.6
	Max Operating Pressure		PSI	85.3 / {No High Pressure Option on Any Size}				
	Rated Water Flow		GPM	19.0	38.0	76.1	114.1	190.4
	Allowable Water Flow		% of Rated	30% - 120%				
	Water Retention Volume		Gal	2.6	5.5	14.3	22.2	39.7
Electrical	Power Supply			115 / 60 / 1	208 volts AC / 60 Hz / 3-Phase			
	Consumption[2]		Watts	48	210	260	310	670
	Minimum Circuit Amps		Amps	0.89	0.6	0.9	2.6	4.7
	MOCP		Amps	15				
Capacity Control				On - Off				
Construction	Dimensions[3]	Width	Inches	23.4	29.9	41.9	54.3	70.3
		Depth	Inches	29.3	38.2	51.2	60.8	77.2
		Height	Inches	69.1	74.8	79.1	80.5	82.1
	Weight	Dry	lbs	805	1100	2050	3200	4740
		Operating	lbs	926	1329	2548	3975	5955
	Noise Level		dB(A)	38	49		46	51
Piping	Chilled/Hot Water		Inches	1-1/4 NPT	1-1/2 NPT	2 NPT		3 NPT
	Cooling Water		Inches	1-1/2 NPT	2 NPT		2-1/2 NPT	3 NPT
	Heat Medium		Inches	1-1/2 NPT		2 NPT	2-1/2 NPT	3 NPT

1 - Minimum cooling water flow is 100%.

2 - Power consumption does not include external pumps or motors.

3 - Height does not include removable lifting lugs but does include level bolts. Width/Depth does not include the junction box or mounting plates.

4 - All specifications are based on water in all circuits and a fouling factor of 0.0005 ft²hr°F/BTU.

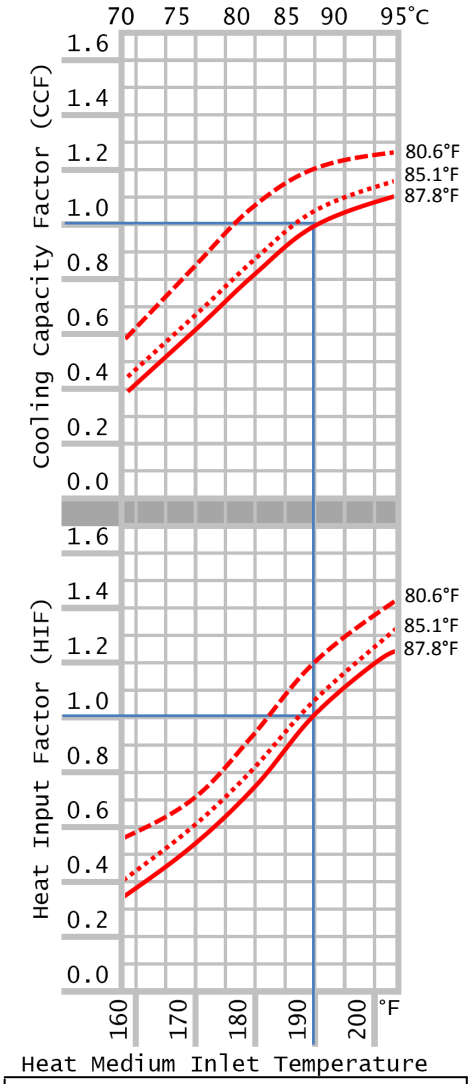
5 - If heat medium temperature exceeds 204.8°F (96°C), the chiller or chiller/heater will shut down and require manual reset.

6 - Do not exceed 85.3 PSI (588 kPa) in any operating circuit unless the high pressure option is chosen. High pressure option allows 113.9 PSI (785 kPa) in the Chilled/Hot Water and Cooling Water circuits only. There is no high pressure option for the Heat Medium circuit.

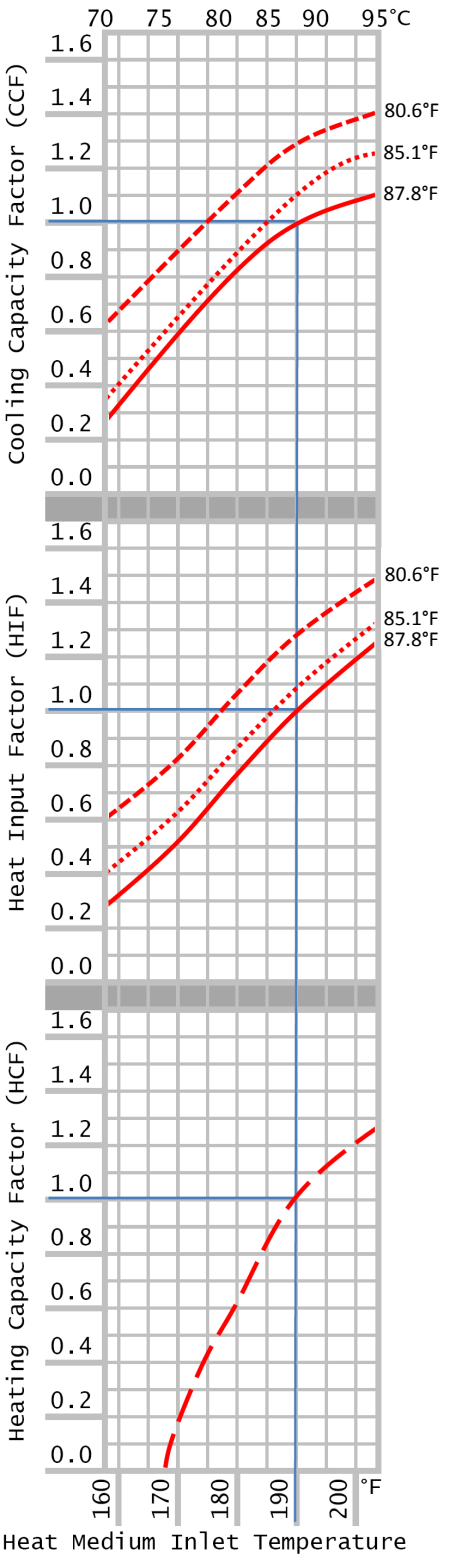
7 - Noise level is measured in a free field at a points 1m away from the cabinet and 1.5m above ground level.

Performance Characteristics at 44.6°F (7°C)

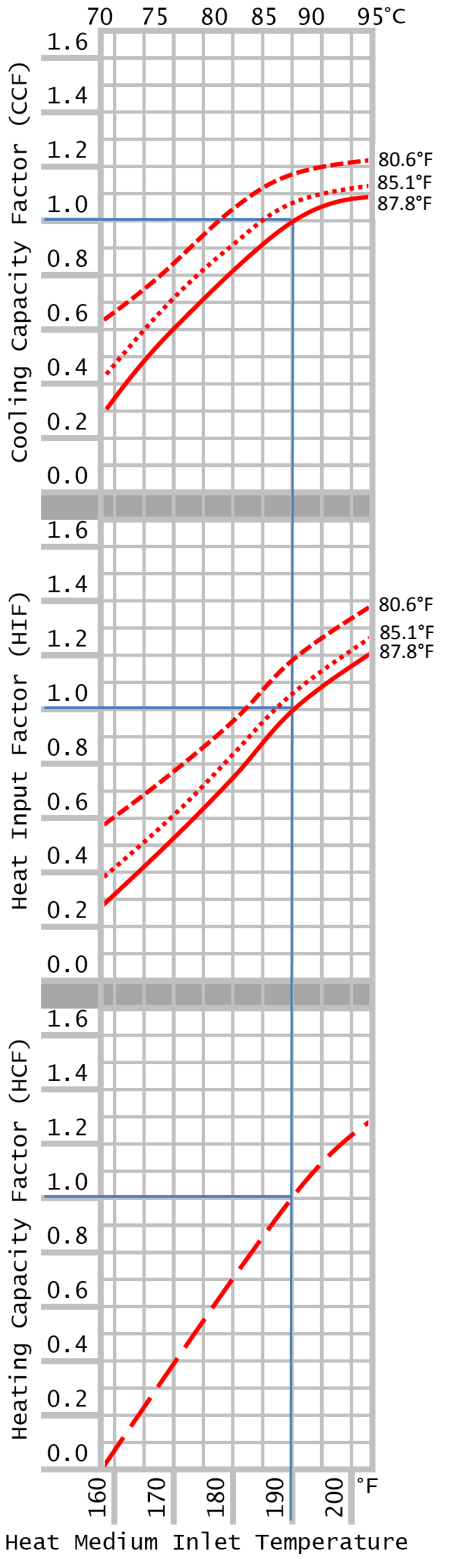
WFC-SC5



WFC-SC/SH10



WFC-SC/SH20

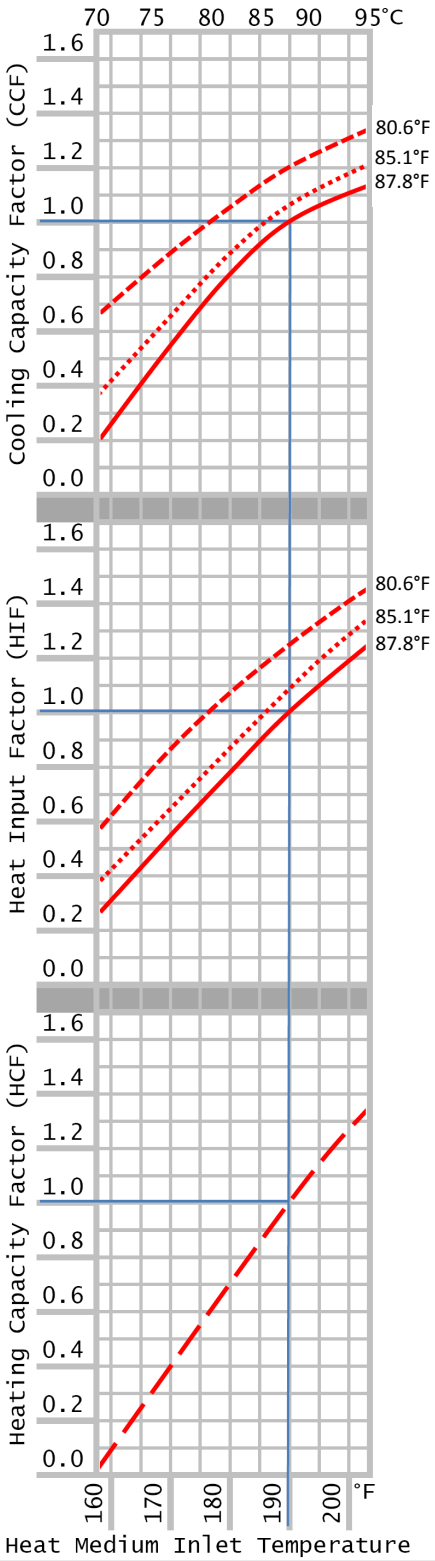


NOTES:

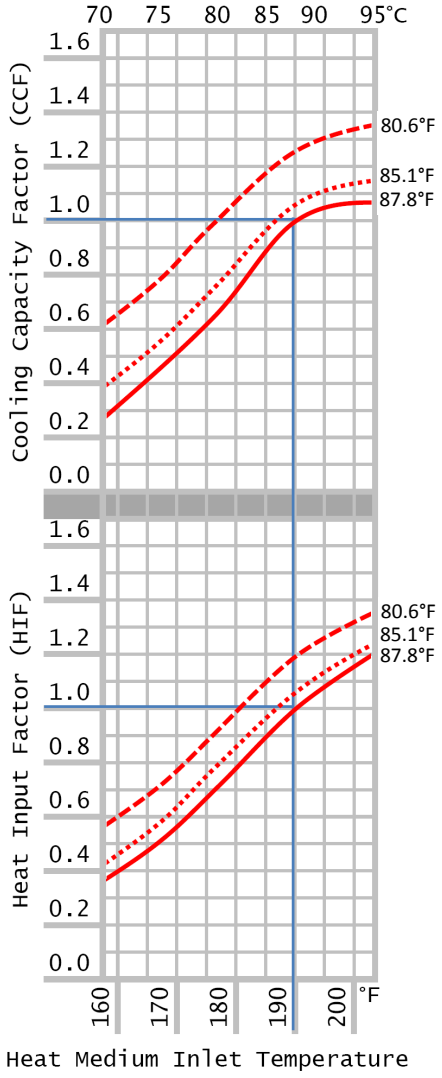
1. Bold blue lines indicate rated design conditions. Where these lines cross designate the Standard Rating Point.
2. All curves are based on water in all circuits flowing at rated design condition flow rates.
3. Heating Efficiency = 97%
4. Performance may be interpolated but must not be extrapolated.
5. Expanded performance curves are provided for reference only. Contact Yazaki Energy Systems, Inc. to obtain certified performance ratings from the factory or to determine performance at other conditions outside the scope of this publication.
6. Performance data based upon standard fouling factor of 0.0005 ft²hr°F/BTU in all circuits.

YAZAKI

WFC-SC/SH30


70 75 80 85 90 95°C
Cooling Capacity Factor (CCF)
1.6 1.4 1.2 1.0 0.8 0.6 0.4 0.2 0.0
80.6°F
85.1°F
87.8°F
Heat Input Factor (HIF)
Heating Capacity Factor (HCF)
160 170 180 190 200 °F
Heat Medium Inlet Temperature

WFC-SC50


70 75 80 85 90 95°C
Cooling Capacity Factor (CCF)
1.6 1.4 1.2 1.0 0.8 0.6 0.4 0.2 0.0
80.6°F
85.1°F
87.8°F
Heat Input Factor (HIF)
160 170 180 190 200 °F
Heat Medium Inlet Temperature

LEGEND

Cooling Water Temperatures

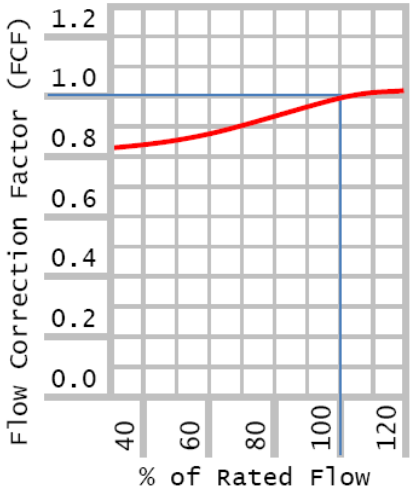
- 80.6°F (27°C)
- 85.1°F (29.5°C)
- 87.8°F (31°C)
- Heating Capacity — No Cooling Water

Allowable Flow Rates:

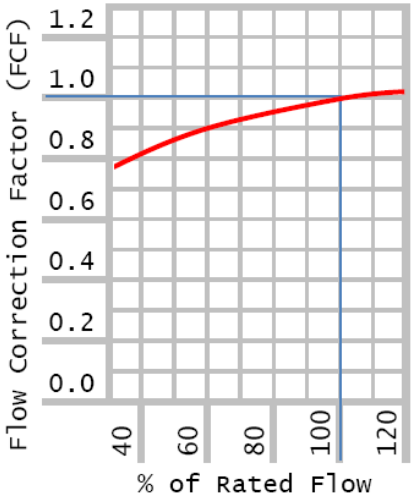
Chilled/Hot Water:	80 - 120%
Cooling Water:	100 - 120%
Heat Medium:	30 - 120%

Heat Medium Flow Rate Correction Chart

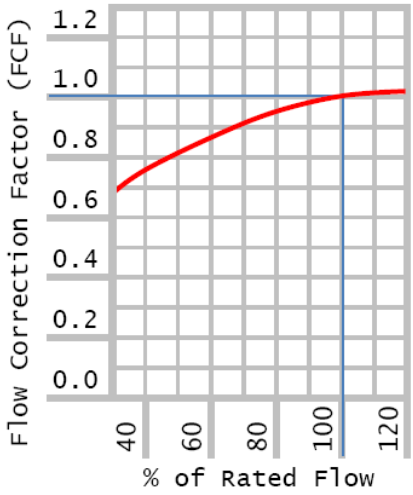
WFC-SC5



WFC-SC/SH10,20,30



WFC-SC50



ABSORPTION CHILLER HEAT BALANCE

HEAT IN = HEAT OUT

Qg + Qe = Qc

Where: Qg = Actual Heat Input to Generator
Qe = Actual Cooling Capacity
Qc = Actual Heat Rejected to Tower

COOLING CAPACITY

Qe = CCF x HMFCF x RCC

Where: Qe = Actual Cooling Capacity
CCF = Cooling Capacity Factor
HMFCF = Flow Correction Factor
RCC = Rated Cooling Capacity

HEAT INPUT (COOLING)

Qg = HIF x HMFCF x RHI

Where: Qg = Actual Heat Input to Generator
HIF = Heat Input Factor
HMFCF = Flow Correction Factor
RHI = Rated Heat Input

HEATING CAPACITY

Qh = HCF x HMFCF x RHC

Where: Qh = Actual Heating Capacity
HCF = Heating Capacity Factor
HMFCF = Flow Correction Factor
RHC = Rated Heating Capacity

HEAT INPUT (HEATING)

Qg = Qh / 0.97

Where: Qg = Actual Heat Input to Generator
Qh = Actual Heating Capacity

TEMPERATURE DIFFERENCE (°F)

ΔT = Qx in Mbtuh / (0.5 x Qa)

Where: ΔT = Temperature Difference
Qx = Actual BTUH Transferred
Qa = Actual Flow Rate in GPM

PRESSURE DROP FOR NONSTANDARD FLOW RATES (PSI)

$\Delta Pa = \Delta Pr \times (Qa / Qr)^2$

Where: ΔPa = Actual Pressure Drop
ΔPr = Rated Design Pressure Drop
Qa = Actual Flow Rate in GPM
Qr = Rated Design Flow Rate GPM

EXAMPLE 1

Given:
Heat Medium Inlet Temp: 195°F
Heat Medium Flow: 114.1 GPM
Cooling Water Inlet Temp: 85.1°F
Cooling Water Flow: 242.5 GPM
Chilled Water Outlet Temp: 44.6°F
Hot Water Outlet Temp: 131°F
Chilled/Hot Water Flow: 72.6 GPM
Chiller-Heater Model: WFC-SH30

Refer to Performance Charts for Curves (Page 7) and to Specifications (Page 5) for Rated Design Information on the Model WFC-SC/SH30.

1. AVAILABLE COOLING CAPACITY:

CCF at 195°F Heat Medium = 1.12
Heat Medium Flow = 114.1 / 114.1 = 100%
HMFCF for 100% Flow Rate = 1.0
Rated Cooling Capacity = 360.0 Mbtuh

Qe = 1.12 x 1.0 x 360.0 = 403.2 Mbtuh (33.6 T)

Chilled Water ΔT = 403.2 / (0.5 x 72.6) = 11.1°F
Chilled Water ΔP = 10.1 * (72.6/72.6)² = 10.1 PSI

2. HEAT INPUT (COOLING):

HIF for 195°F Heat Medium = 1.17
HMFCF for 100% Flow Rate = 1.0
Rated Heat Input = 514.2 Mbtuh

Qg = 1.17 x 1.0 x 514.2 = 601.6 Mbtuh Heat Input

Heat Medium ΔT = 601.6 / (0.5 x 114.1) = 10.5°F
Heat Medium ΔP = 8.8 * (114.1 / 114.1)² = 8.8 PSI

3. HEAT REJECTED TO COOLING TOWER:

Qc = Qg + Qe

Qc = 601.6 + 403.2 = 1004.8 Mbtuh
Required minimum flow rate = 242.5 GPM

The cooling tower selected must be capable of rejecting a minimum of 1004.8 Mbtuh at a minimum flow rate of 242.5 GPM.

Cooling Water ΔT = 1004.8 / (0.5 x 242.5) = 8.3°F
Cooling Water ΔP = 6.7 * (242.5/242.5)² = 6.7 PSI

4. AVAILABLE HEATING CAPACITY:

HCF at 195°F Heat Medium = 1.12
HMFCF for 100% Flow Rate = 1.0
Rated Heating Capacity = 498.9 Mbtuh

Qh = 1.12 x 1.0 x 498.9 = 558.8 Mbtuh

Hot Water ΔT = 558.8 / (0.5 x 72.6) = 15.4°F
Hot Water ΔP = 10.1 * (72.6 / 72.6)² = 10.1 PSI

5. HEAT INPUT (HEATING):

Qg = Qh / 0.97 = 558.8 / 0.97 = 576.1 Mbtuh Heat Input

Hot Water ΔT = 576.1 / (0.5 x 114.1) = 10.1°F
Hot Water ΔP = 8.8 * (114.1 / 114.1)² = 8.8 PSI

EXAMPLE 2

Given:
Heat Medium Inlet Temp: 203°F
Heat Medium Flow: 57.0 GPM
Cooling Water Inlet Temp: 85.1°F
Cooling Water Flow: 242.5 GPM
Chilled Water Outlet Temp: 44.6°F
Hot Water Outlet Temp: 131°F
Chilled/Hot Water Flow: 72.6 GPM
Chiller-Heater Model: WFC-SH30

Refer to Performance Charts for Curves (Page 7) and to Specifications (Page 5) for Rated Design Information on the Model WFC-SC/SH30.

1. AVAILABLE COOLING CAPACITY:

CCF at 203°F Heat Medium = 1.22
Heat Medium Flow = 57.0 / 114.1
Heat Medium Flow = 50%
HMFCF for 50% Flow Rate = 0.86

Qe = 1.22 x 0.86 x 360.0 = 377.7 Mbtuh (31.5 T)

Chilled Water ΔT = 377.7 / (0.5 x 72.6) = 10.4°F
Chilled Water ΔP = 10.1 * (72.6 / 72.6)² = 10.1 PSI

2. HEAT INPUT (COOLING):

HIF at 203°F Heat Medium = 1.35
HMFCF for 50% Flow Rate = 0.86
Rated Heat Input = 514.2 Mbtuh

Qg = 1.35 x 0.86 x 514.2 Mbtuh = 597.0 Mbtuh Heat Input

Heat Medium ΔT = 597.0 / (0.5 x 57.0) = 20.9°F
Heat Medium ΔP = 8.8 * (57.0 / 114.1)² = 2.2 PSI

3. HEAT REJECTED TO COOLING TOWER:

Qc = Qg + Qe

Qc = 597.0 + 377.7 = 974.7 Mbtuh
Required minimum flow rate = 242.5 GPM

The cooling tower selected must be capable of rejecting a minimum of 974.7 Mbtuh at a minimum flow rate of 242.5 GPM.

Cooling Water ΔT = 974.7 / (0.5 x 242.5) = 8.0°F
Cooling Water ΔP = 6.7 * (242.5 / 242.5)² = 6.7 PSI

4. AVAILABLE HEATING CAPACITY:

HCF at 203°F Heat Medium = 1.33
HMFCF for 50% Flow Rate = 0.86
Rated Heating Capacity = 498.9 Mbtuh

Qh = 1.33 x 0.86 x 498.9 Mbtuh = 570.6 Mbtuh

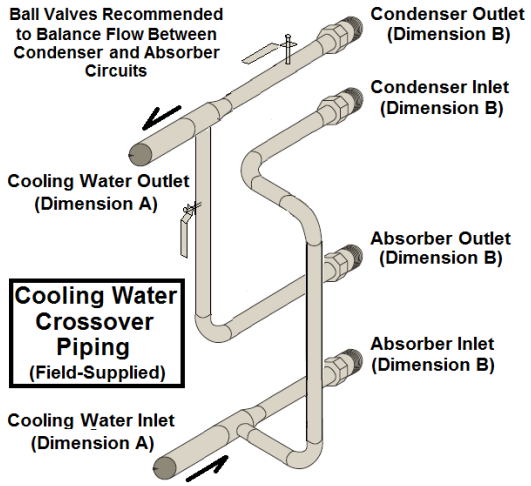
Hot Water ΔT = 570.6 / (0.5 x 72.6) = 15.7°F
Hot Water ΔP = 10.1 * (72.6 / 72.6)² = 10.1 PSI

5. HEAT INPUT (HEATING):

Qg = Qh / 0.97 = 570.6 / 0.97 = 588.2 Mbtuh Heat Input

Heat Medium ΔT = 588.2 / (0.5 x 57.0) = 20.6°F
Heat Medium ΔP = 8.8 x (57.0 / 114.1)² = 2.2 PSI

COOLING WATER CROSSOVER PIPING


Ball Valves Recommended to Balance Flow Between Condenser and Absorber Circuits
Condenser Outlet (Dimension B)
Condenser Inlet (Dimension B)
Cooling Water Outlet (Dimension A)
Absorber Outlet (Dimension B)
Cooling Water Crossover Piping (Field-Supplied)
Absorber Inlet (Dimension B)
Cooling Water Inlet (Dimension A)

MODEL WFC-	COPPER TUBING		STEEL TUBING	
	A	B	A	B
SC5	2"	1-1/2"	2"	1-1/2"
SC/SH20	3"	2"	3-1/2"	2-1/2"
SC/SH30	3"	2-1/2"	4"	3"
SC50	4"	3"	5"	3-1/2"

The condenser and absorber of the WFC-SC/SH Series are connected in parallel by cooling water crossover piping that is field-fabricated with field-supplied parts and installed by others at the jobsite. The only exception is the WFC-SC/SH10 model which only has one inlet and one outlet for cooling water.

The cooling water crossover piping should be installed per these recommendations to ensure balanced and controllable flow through the condenser and absorber.

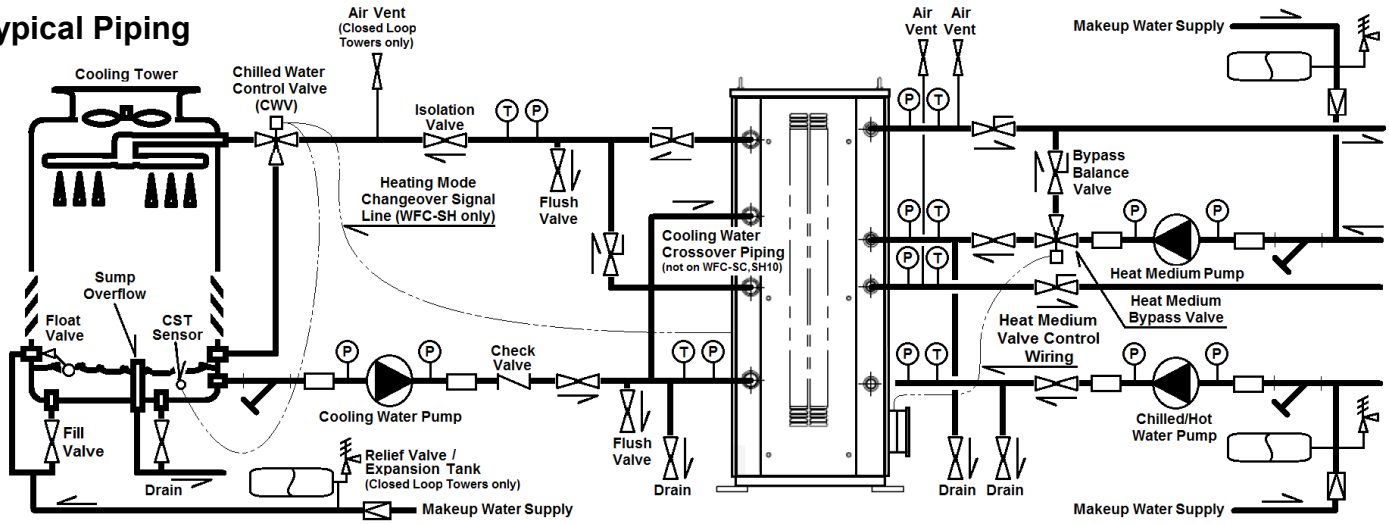
Due to differing flow characteristics of copper and steel tubing, the sizes of the pipe required to field-fabricate the cooling water crossover may differ. The chart here presents the minimum size of pipe for the model indicated.

Dimension A is also referred to as the Common side. This is where the cooling tower typically connects to the crossover piping.

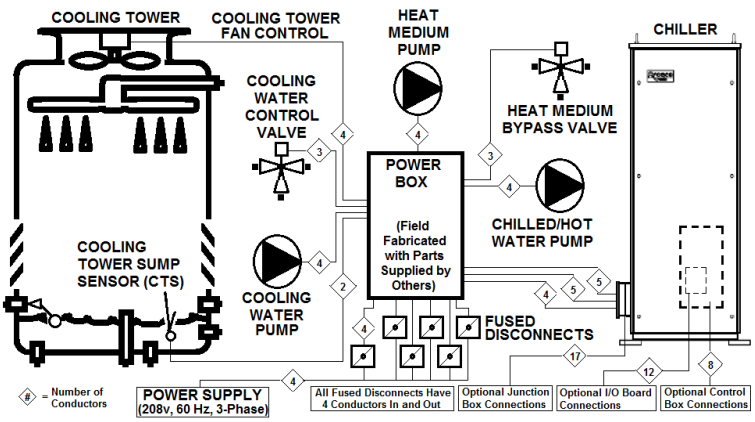
Dimension B is also referred to as Branch Piping and connects directly to the unit. If the size indicated by the chart is larger than the size of the connection at the unit, make the reduction as close to the unit as possible.

APPLICATION

Typical Piping



Typical Field Wiring



Connection Options:

1. Remote Heat/Cool Mode Selection
2. Remote Enable/Disable Selection
3. Mode Status Feedback
4. Heat Source Control
5. Alarm Indication
6. Cooling Water Flow Switch
7. Freeze Protection

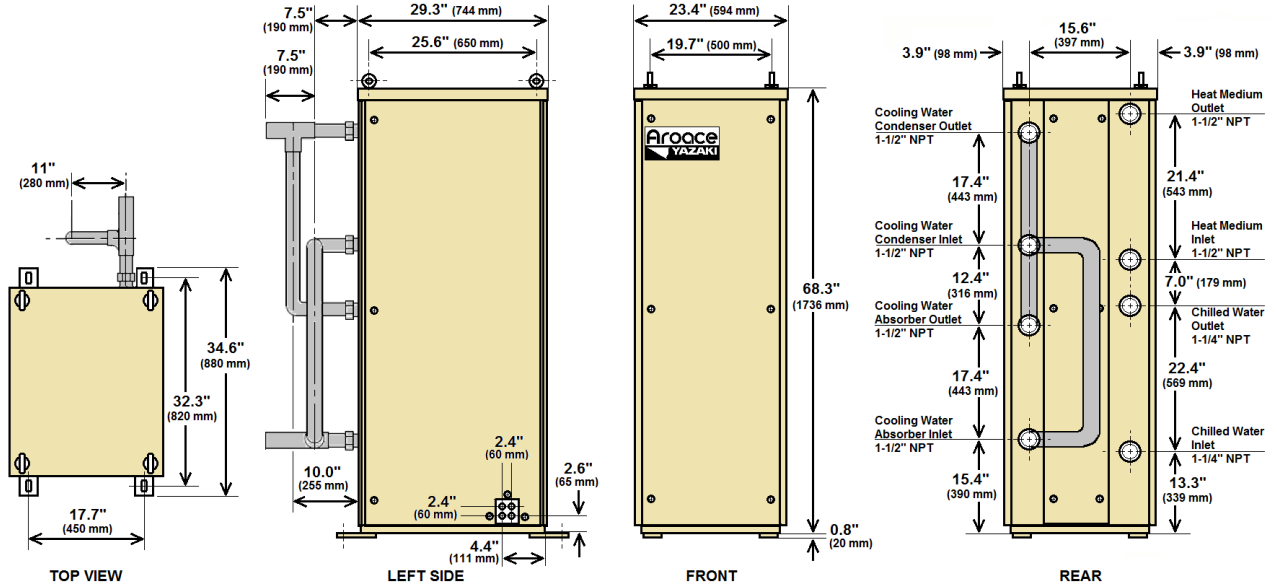
LEGEND

- P - Pressure Gauge, T - Temperature Gauge
- Circuit Setter / Balance Valve
- Isolation / Shut-Off Valve
- Pressure Reducing Valve
- Relief Valve
- Strainer/ Cleanout
- Expansion Tank

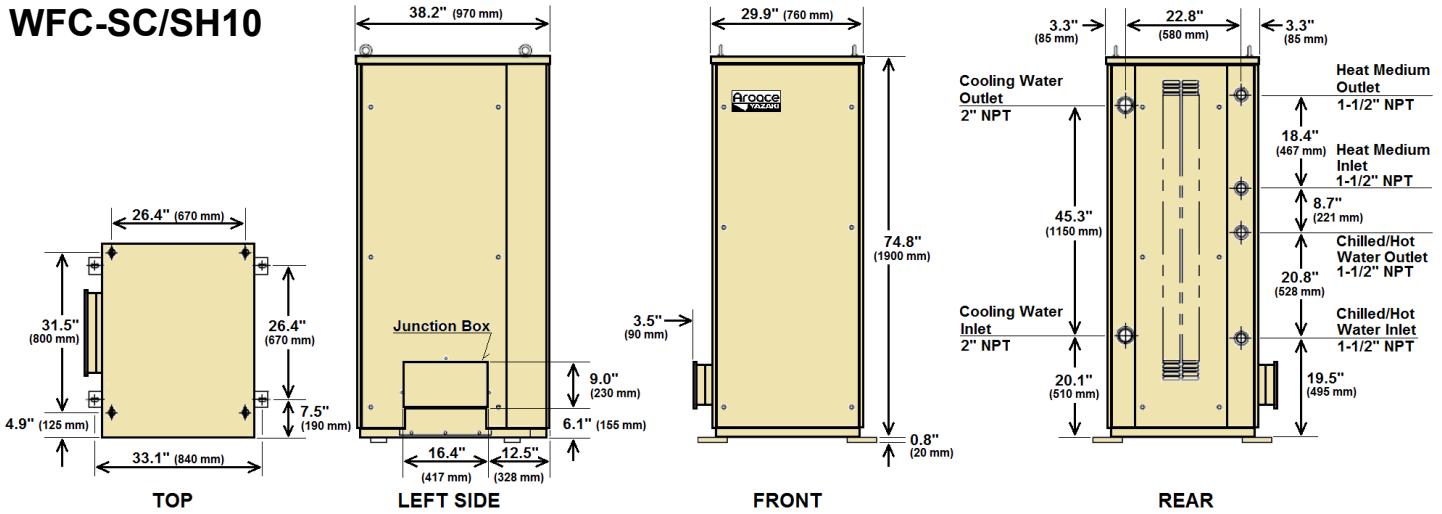
EQUIPMENT DIMENSIONS

Drawings are not to scale. Piping shown is all Field-Supplied.

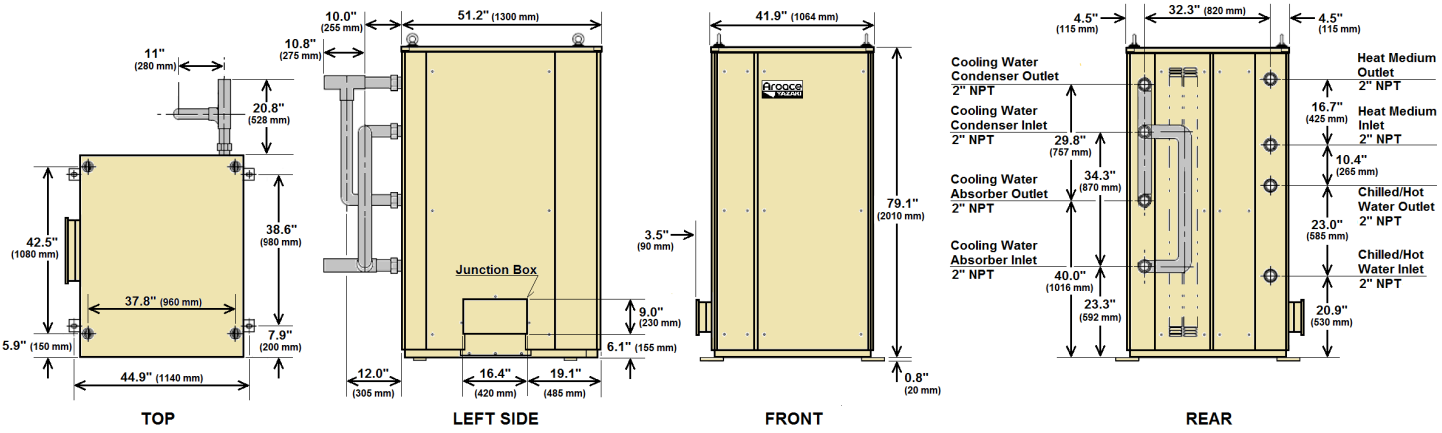
WFC-SC5



WFC-SC/SH10



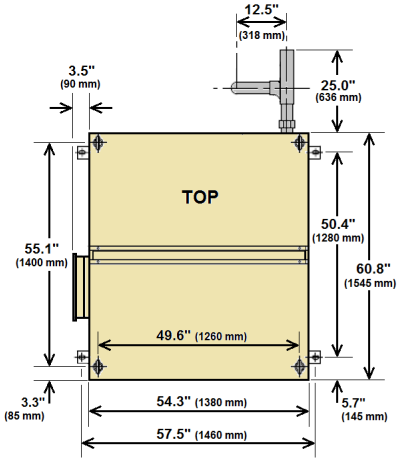
WFC-SC/SH20

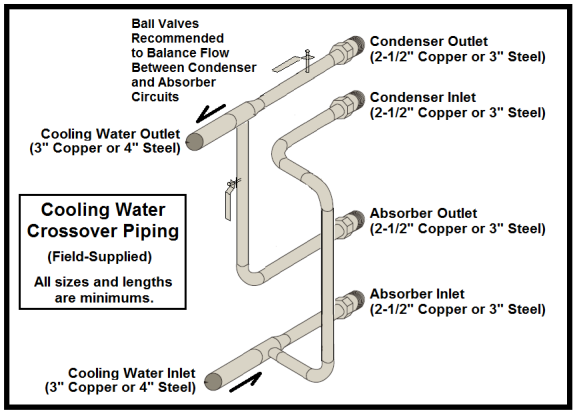


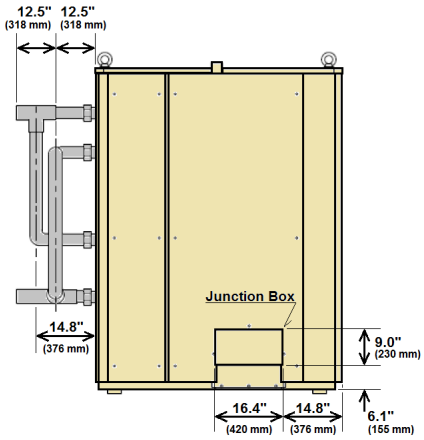
EQUIPMENT DIMENSIONS

Drawings are not to scale. Piping shown is all Field-Supplied.

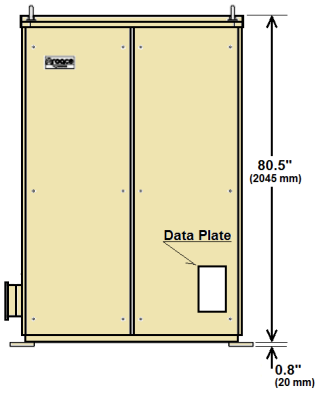
WFC-SC/SH30



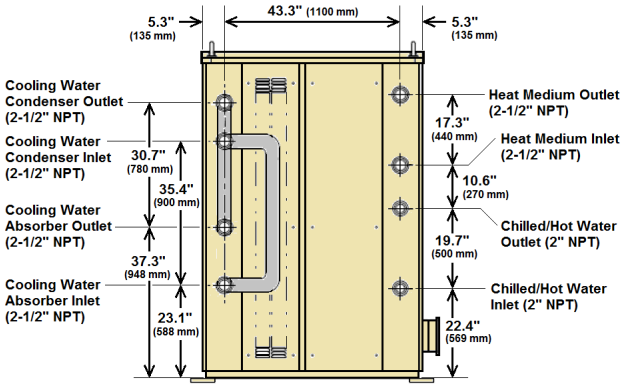

Ball Valves Recommended to Balance Flow Between Condenser and Absorber Circuits
Condenser Outlet (2-1/2" Copper or 3" Steel)
Condenser Inlet (2-1/2" Copper or 3" Steel)
Cooling Water Outlet (3" Copper or 4" Steel)
Cooling Water Crossover Piping
(Field-Supplied)
All sizes and lengths are minimums.
Absorber Outlet (2-1/2" Copper or 3" Steel)
Absorber Inlet (2-1/2" Copper or 3" Steel)
Cooling Water Inlet (3" Copper or 4" Steel)



LEFT SIDE

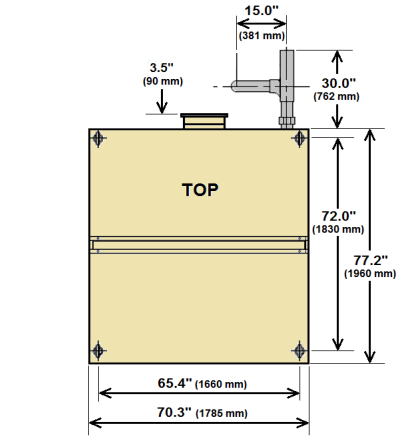


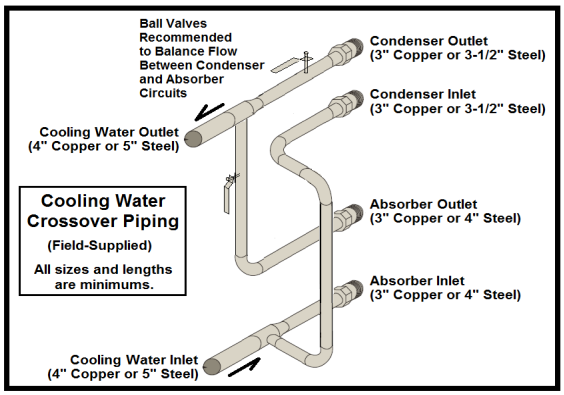
FRONT

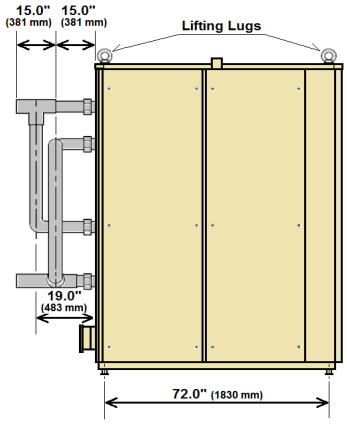

5.3" (135 mm)
43.3" (1100 mm)
5.3" (135 mm)
Cooling Water Condenser Outlet (2-1/2" NPT)
Cooling Water Condenser Inlet (2-1/2" NPT)
Cooling Water Absorber Outlet (2-1/2" NPT)
Cooling Water Absorber Inlet (2-1/2" NPT)
30.7" (780 mm)
35.4" (900 mm)
37.3" (948 mm)
23.1" (588 mm)
Heat Medium Outlet (2-1/2" NPT)
Heat Medium Inlet (2-1/2" NPT)
Chilled/Hot Water Outlet (2" NPT)
Chilled/Hot Water Inlet (2" NPT)
17.3" (440 mm)
10.6" (270 mm)
19.7" (500 mm)
22.4" (569 mm)

REAR

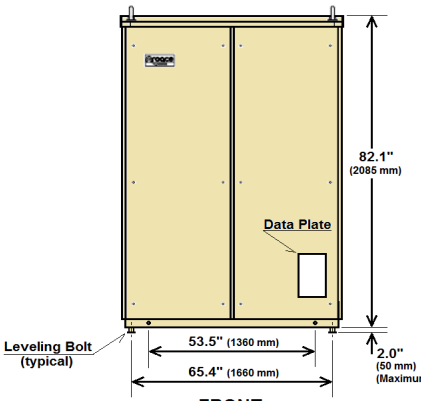
WFC-SC50



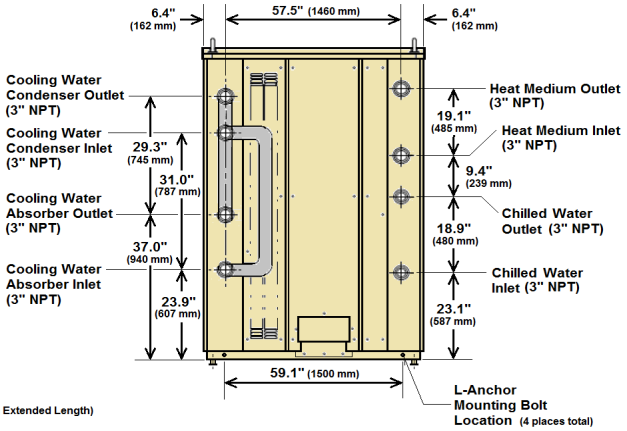

Ball Valves Recommended to Balance Flow Between Condenser and Absorber Circuits
Condenser Outlet (3" Copper or 3-1/2" Steel)
Condenser Inlet (3" Copper or 3-1/2" Steel)
Cooling Water Outlet (4" Copper or 5" Steel)
Cooling Water Crossover Piping
(Field-Supplied)
All sizes and lengths are minimums.
Absorber Outlet (3" Copper or 4" Steel)
Absorber Inlet (3" Copper or 4" Steel)
Cooling Water Inlet (4" Copper or 5" Steel)



LEFT SIDE



FRONT


6.4" (162 mm)
57.5" (1460 mm)
6.4" (162 mm)
Cooling Water Condenser Outlet (3" NPT)
Cooling Water Condenser Inlet (3" NPT)
Cooling Water Absorber Outlet (3" NPT)
Cooling Water Absorber Inlet (3" NPT)
29.3" (745 mm)
31.0" (787 mm)
37.0" (940 mm)
23.9" (607 mm)
Heat Medium Outlet (3" NPT)
Heat Medium Inlet (3" NPT)
Chilled Water Outlet (3" NPT)
Chilled Water Inlet (3" NPT)
19.1" (485 mm)
9.4" (239 mm)
18.9" (480 mm)
23.1" (587 mm)
59.1" (1500 mm)
L-Anchor Mounting Bolt Location (4 places total)

REAR

YAZAKI

YAZAKI SALES REPRESENTATIVE/DISTRIBUTOR

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701 E. PLANO PKWY, SUITE #305
PLANO, TX 75074

Phone: (469) 229-5443
FAX: (469) 229-5448

Email: Yazaki@yazakienergy.com

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